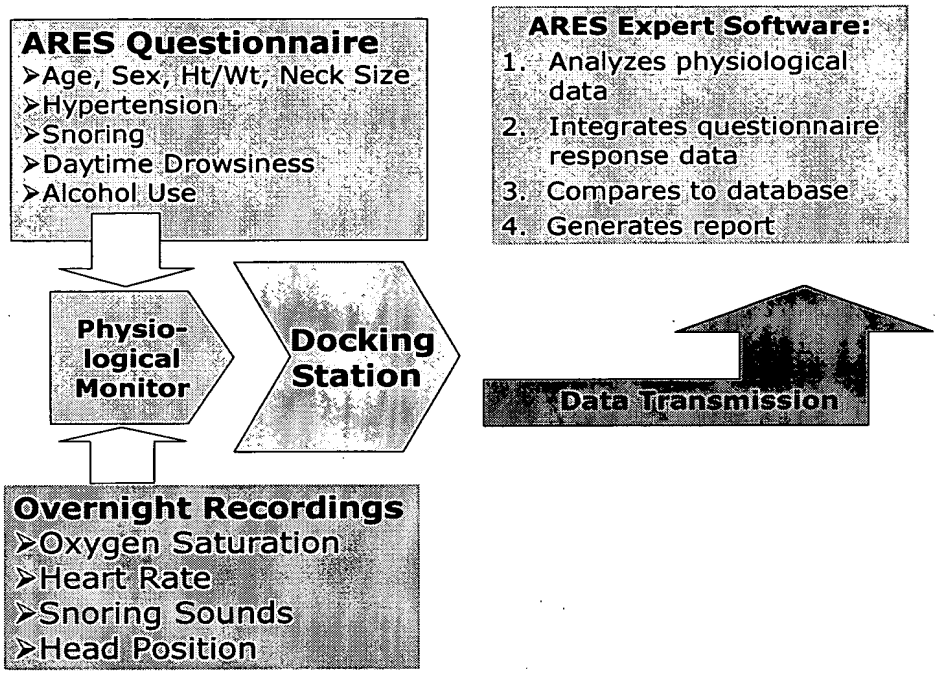
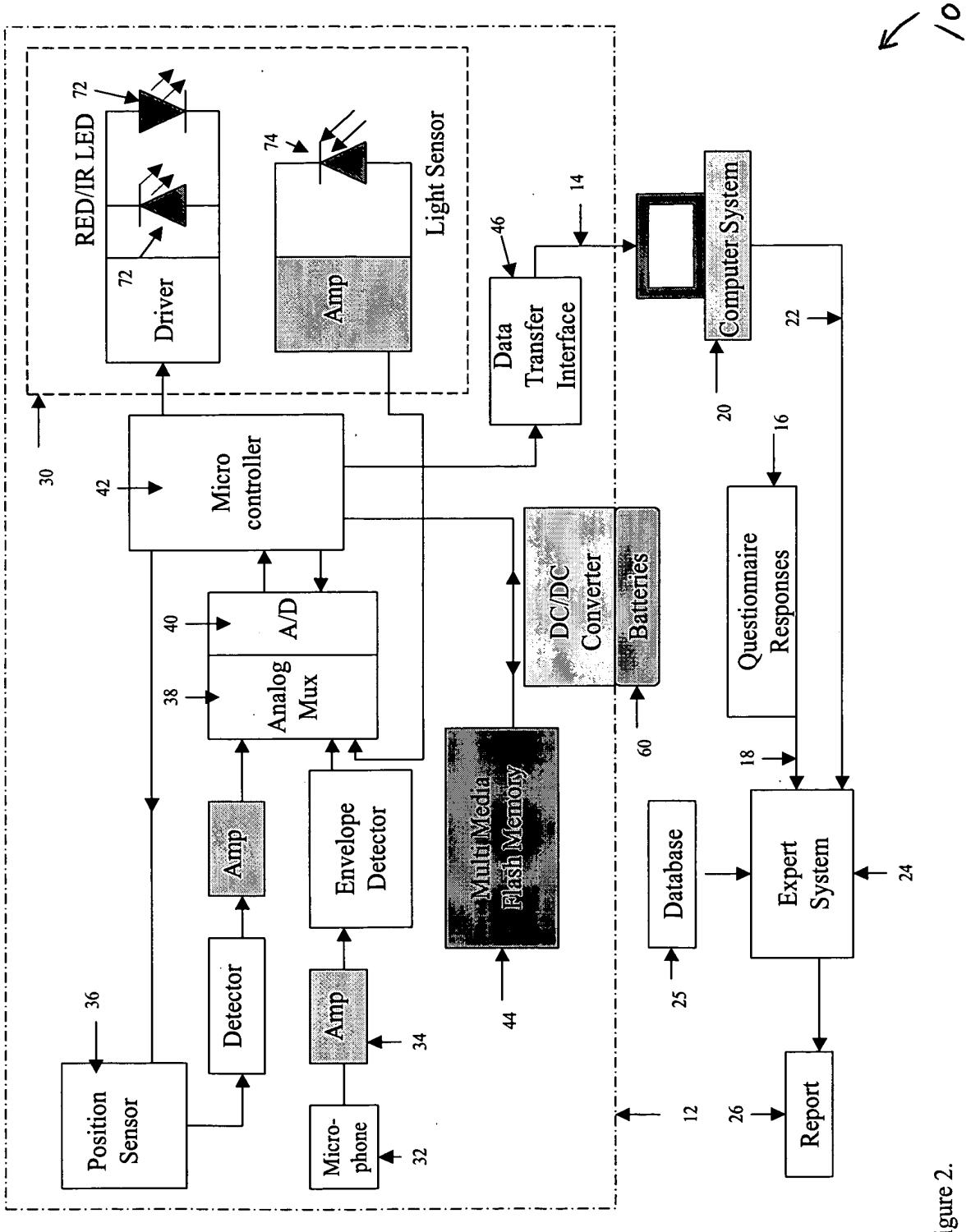

ARES Questionnaire
➢Age, Sex, Ht/Wt, Neck Size
➢Hypertension
➢Snoring
➢Daytime Drowsiness
➢Alcohol Use
ARES Expert Software:
1. Analyzes physiological data
2. Integrates questionnaire response data
3. Compares to database
4. Generates report
Physio-logical Monitor
Docking Station
Data Transmission
Overnight Recordings
➢Oxygen Saturation
➢Heart Rate
➢Snoring Sounds
➢Head Position

Figure 1.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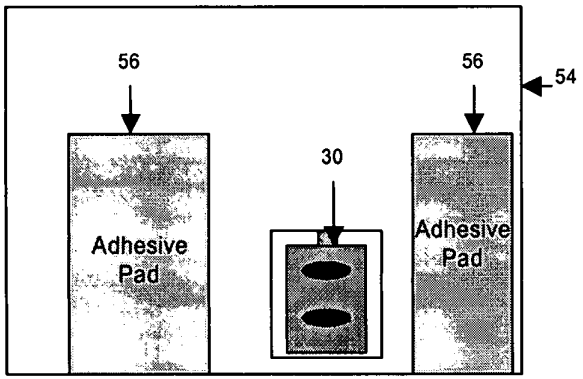
RED/IR LED
72
72
Driver
74
Amp
Light Sensor
30
42
Micro controller
46
Data Transfer Interface
14
Computer System
20
22
16
Questionnaire Responses
18
Expert System
24
Database
25
26
Report
12
60
DC/DC Converter
Batteries
40
A/D
38
Analog Mux
Amp
Detector
Envelope Detector
Amp
Multi Media Flash Memory
44
36
Position Sensor
34
Micro-phone
32

Figure 2.

Applicant: ARES MEDICAL, INC. et al.
9 Sheets of Drawings with 16 Figs.
Filing Date: 28 December 2001
Earliest Priority Date: 29 December 2000
DOCKET NO. 38461-6098
Sheet 3 of 9
SLEEP APNEA RISK EVALUATION

Figure 4



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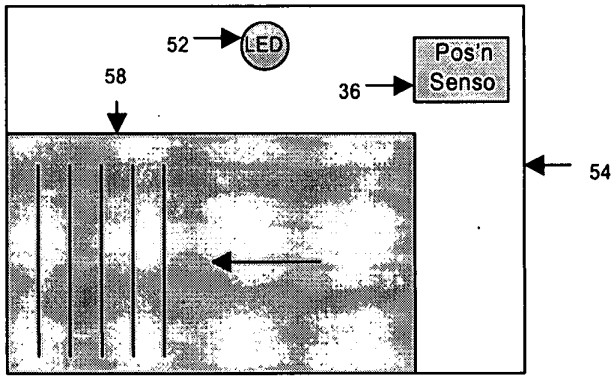

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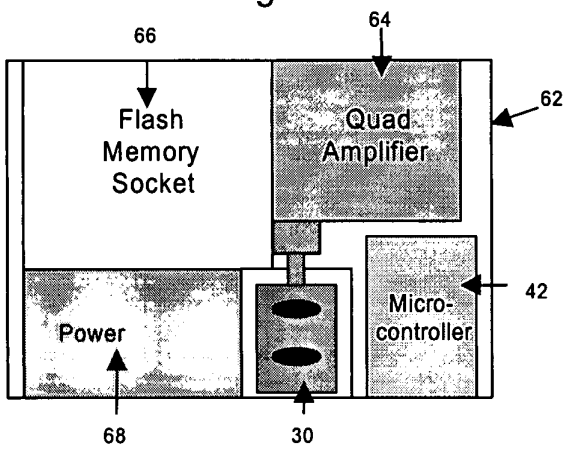

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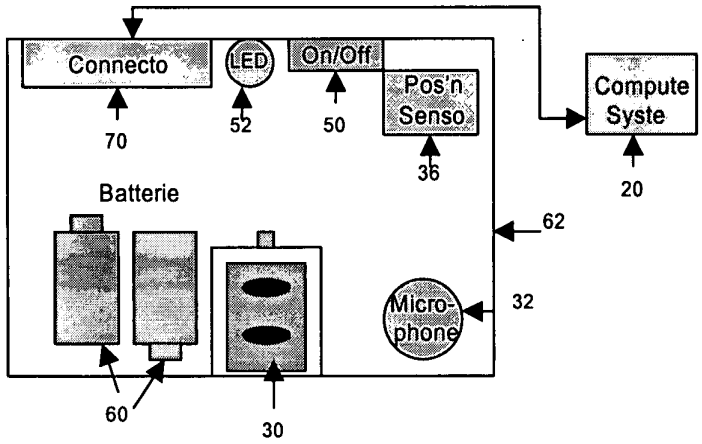

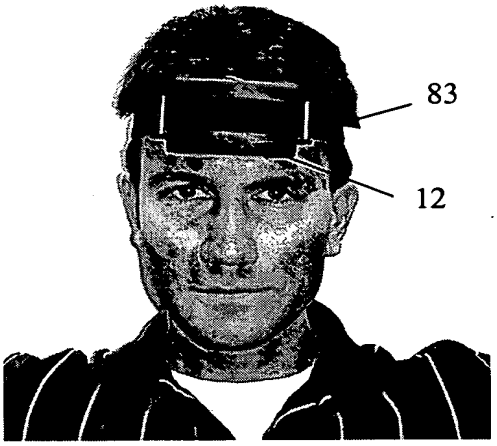

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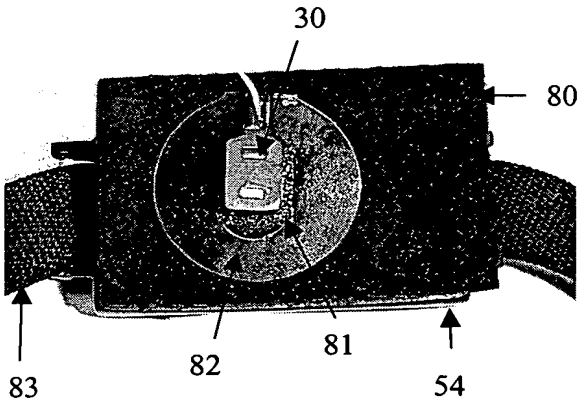

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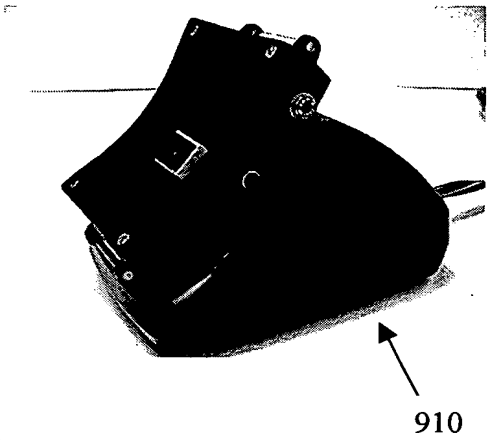

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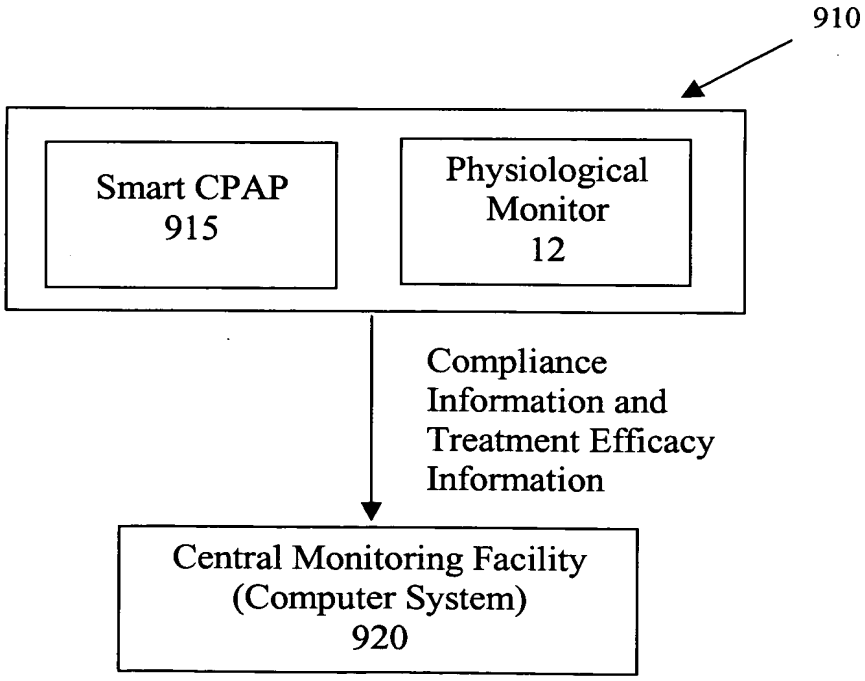

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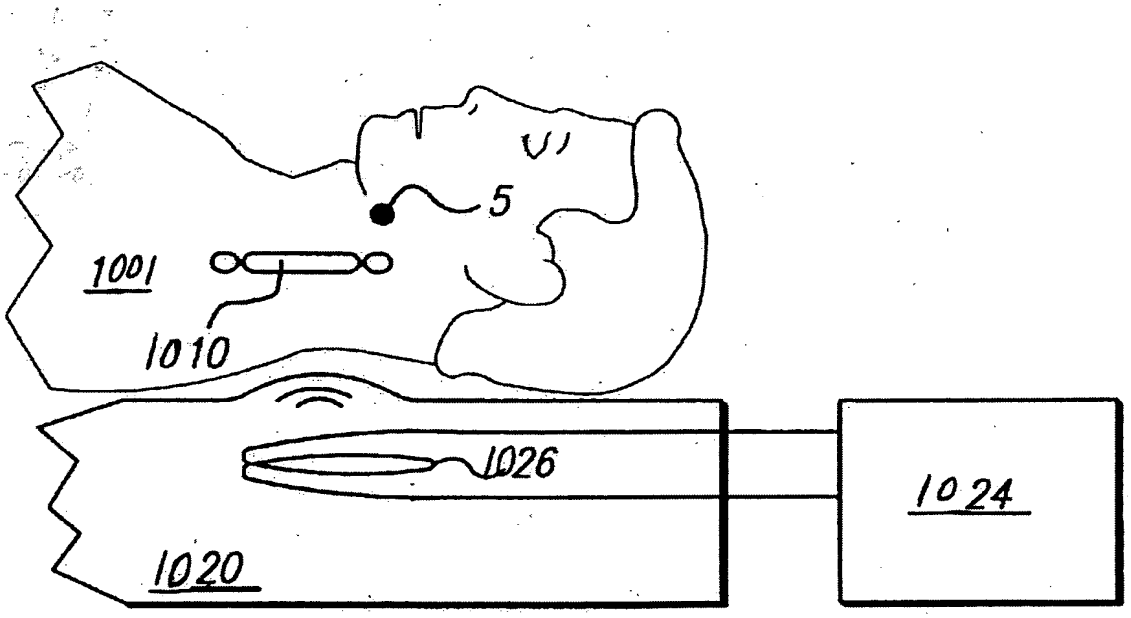

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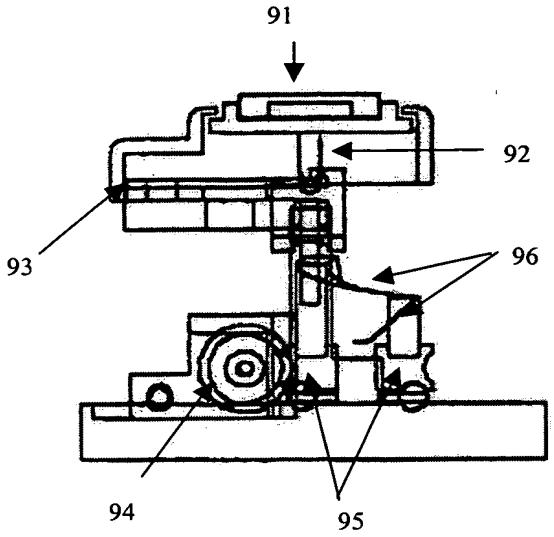

Figure 12. Illustration of SpO2 active pressure device.

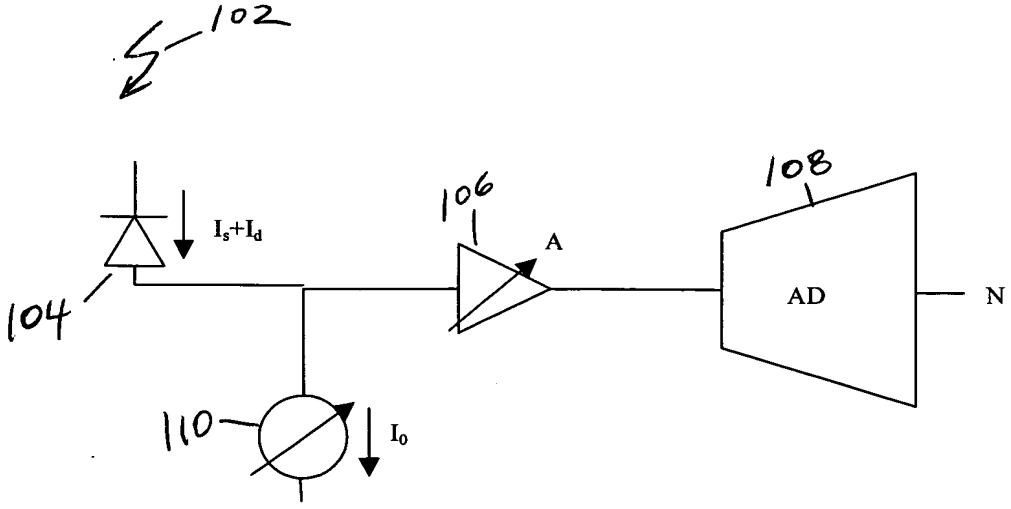

Figure 13. Diagram of SpO2 Measuring Circuit

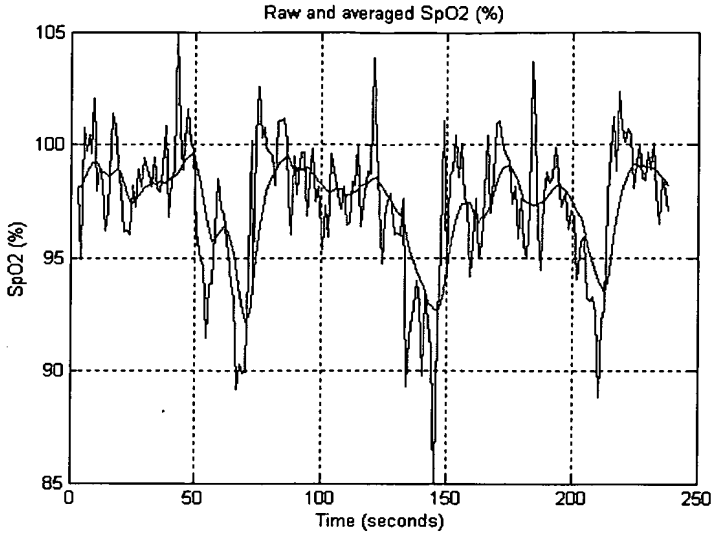

Figure 14. Illustration of the raw SpO2 signal and after application of the three level smoothing algorithm.

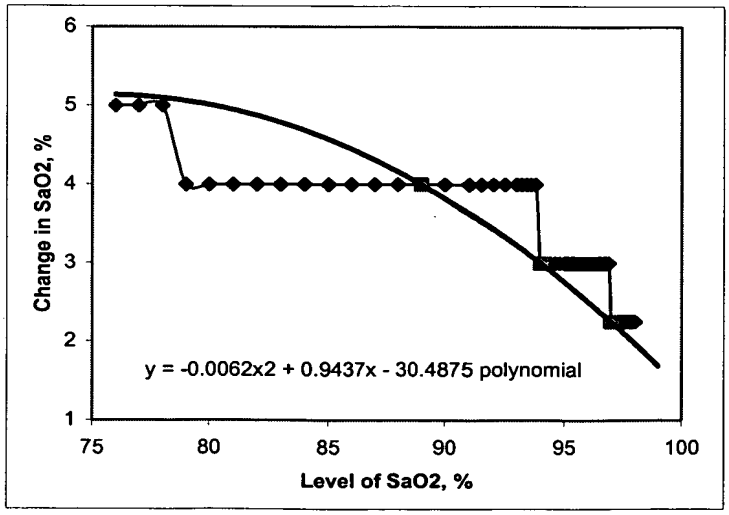

Figure 15: Curve of the regression line for calculating required magnitude of desaturation based on the stepped approach.

Figure 16. Physiological monitor in alternative embodiment with airflow sensor.